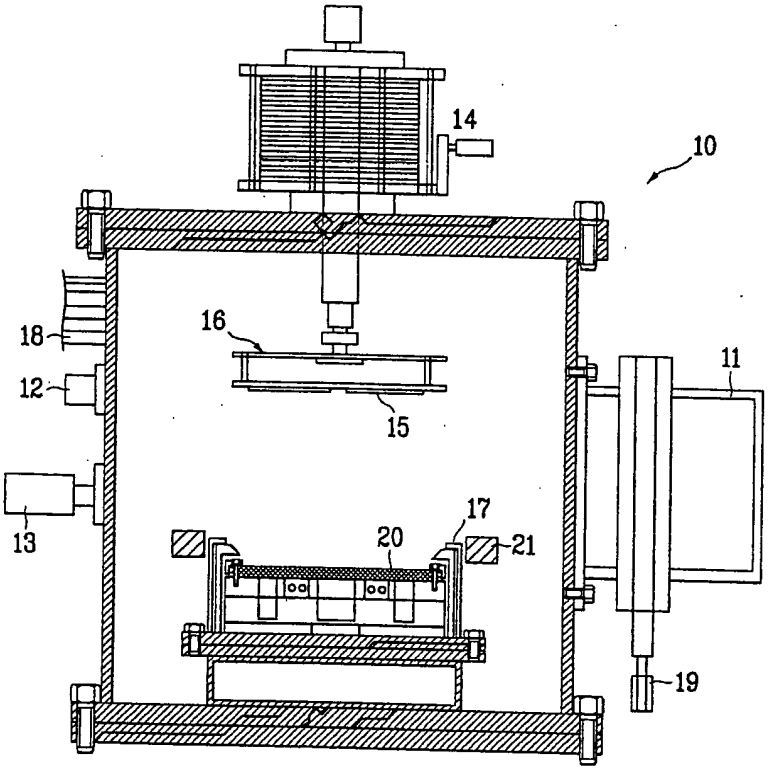
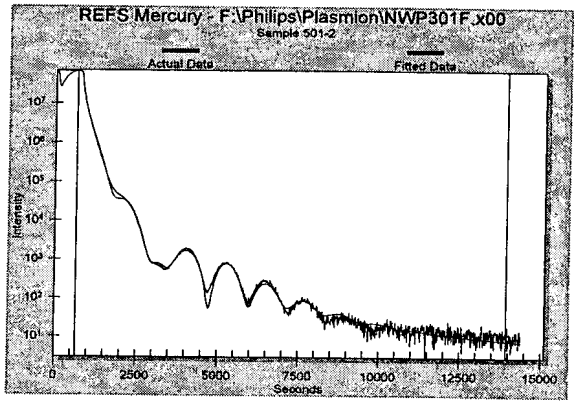
FIG.1

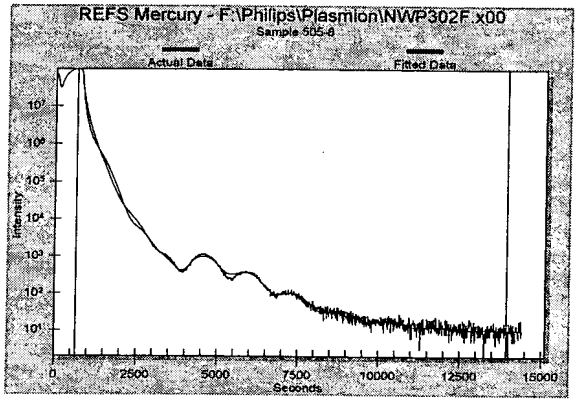


[redacted]

NSIB process



Conventional sputtering



Sample	Layer Description	Thickness (Å)	Relative Density (%)	Density (g/cm^3)
NSIB process	Si Layer	---	100 (fixed)	2.33
	SiO_2	16.5±2.6	100 (fixed)	2.27
	Diamond Layer	108.4±1.3	86±2	3.03±0.02
	Diamond Layer	25.6±1.3	22±4	0.77±0.04
Conventional sputtering	Si Layer	---	100 (fixed)	2.33
	Diamond Layer	107.5±1.5	62±2	2.18±0.02
	Diamond Layer	24.2±0.8	33±2	1.16±0.02

FIG 2

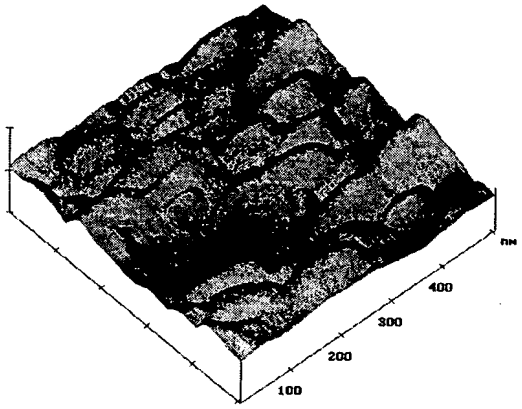


FIG 3A

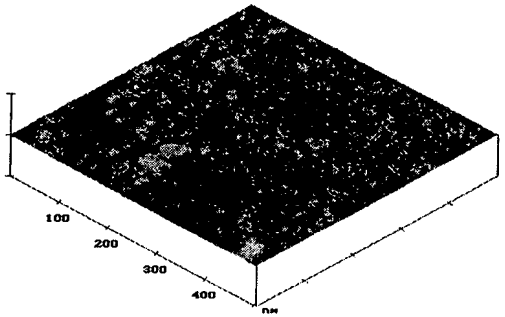


FIG 3B

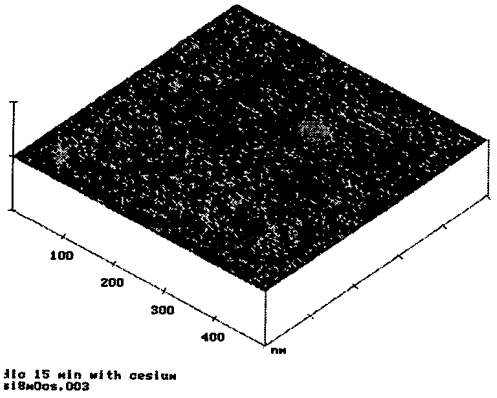


FIG 3C

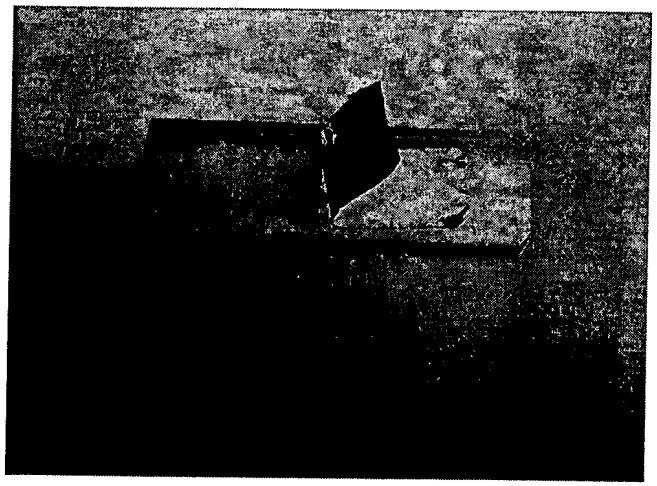


FIG 4A

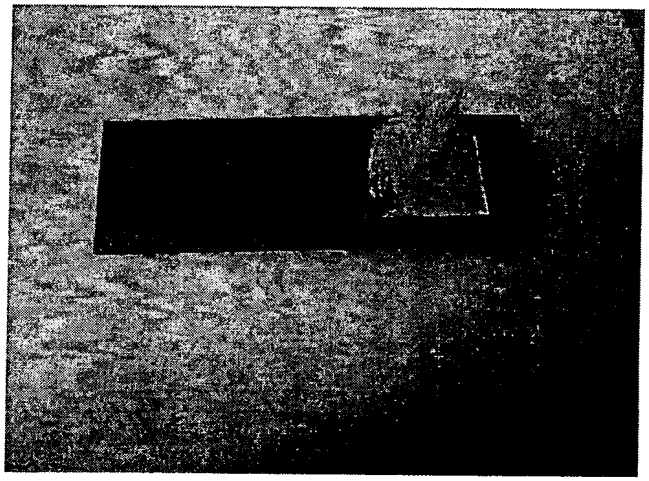


FIG 4B

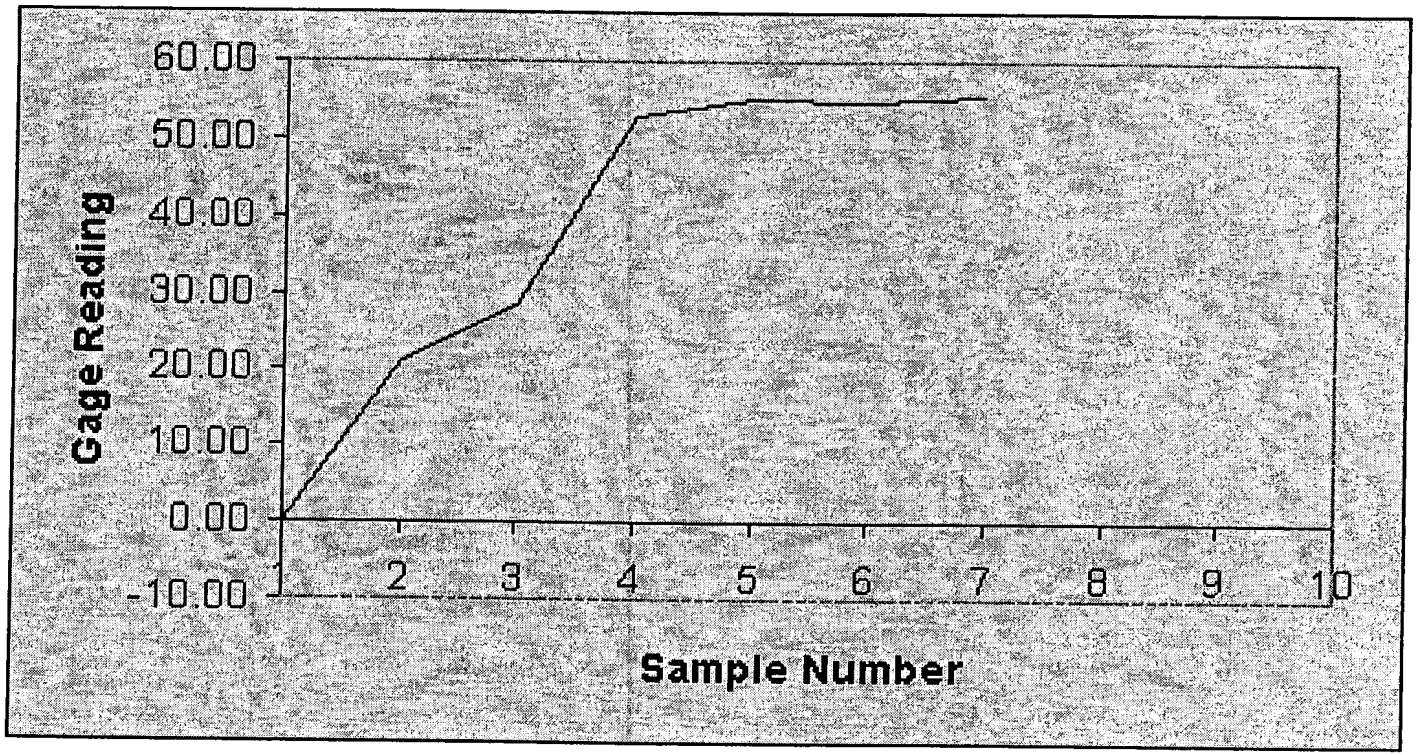
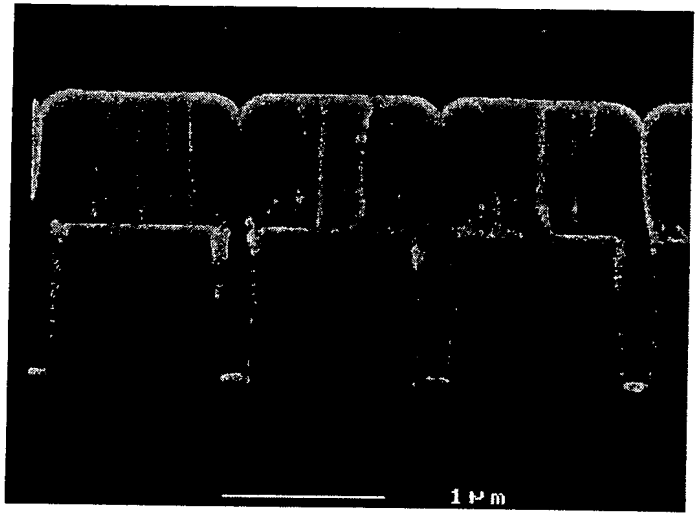

60.00
50.00
40.00
30.00
20.00
10.00
0.00
-10.00
Gage Reading
1
2
3
4
5
6
7
8
9
10
Sample Number

FIG 5



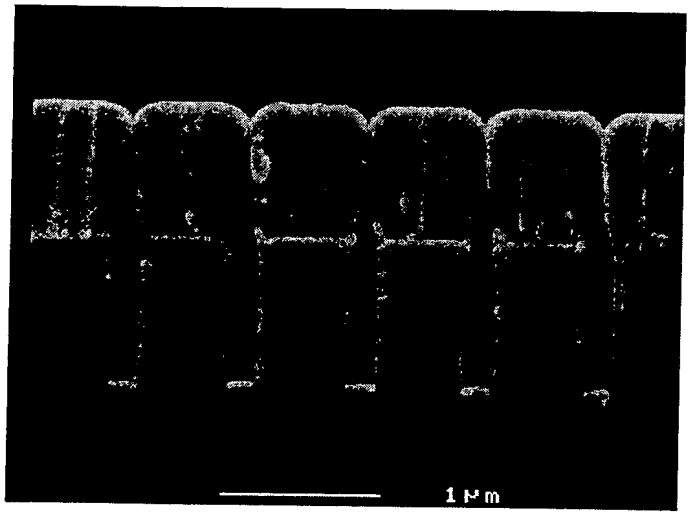
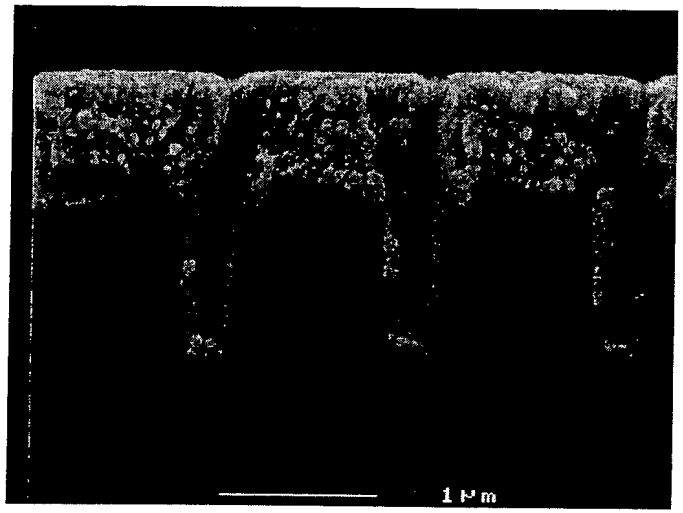


FIG 6A



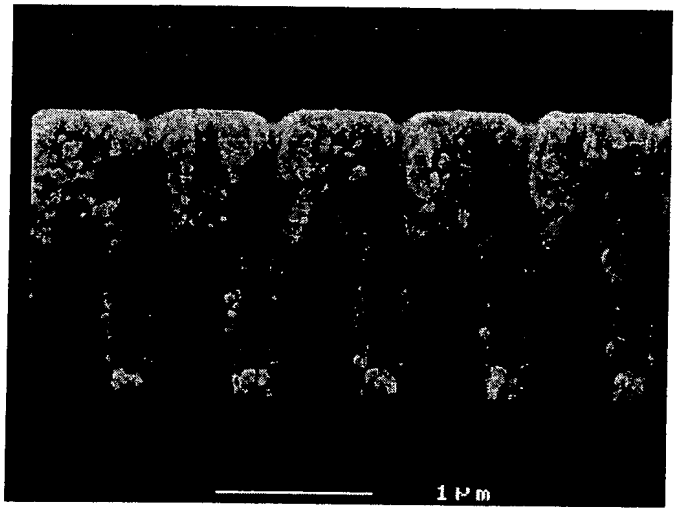


FIG 6B

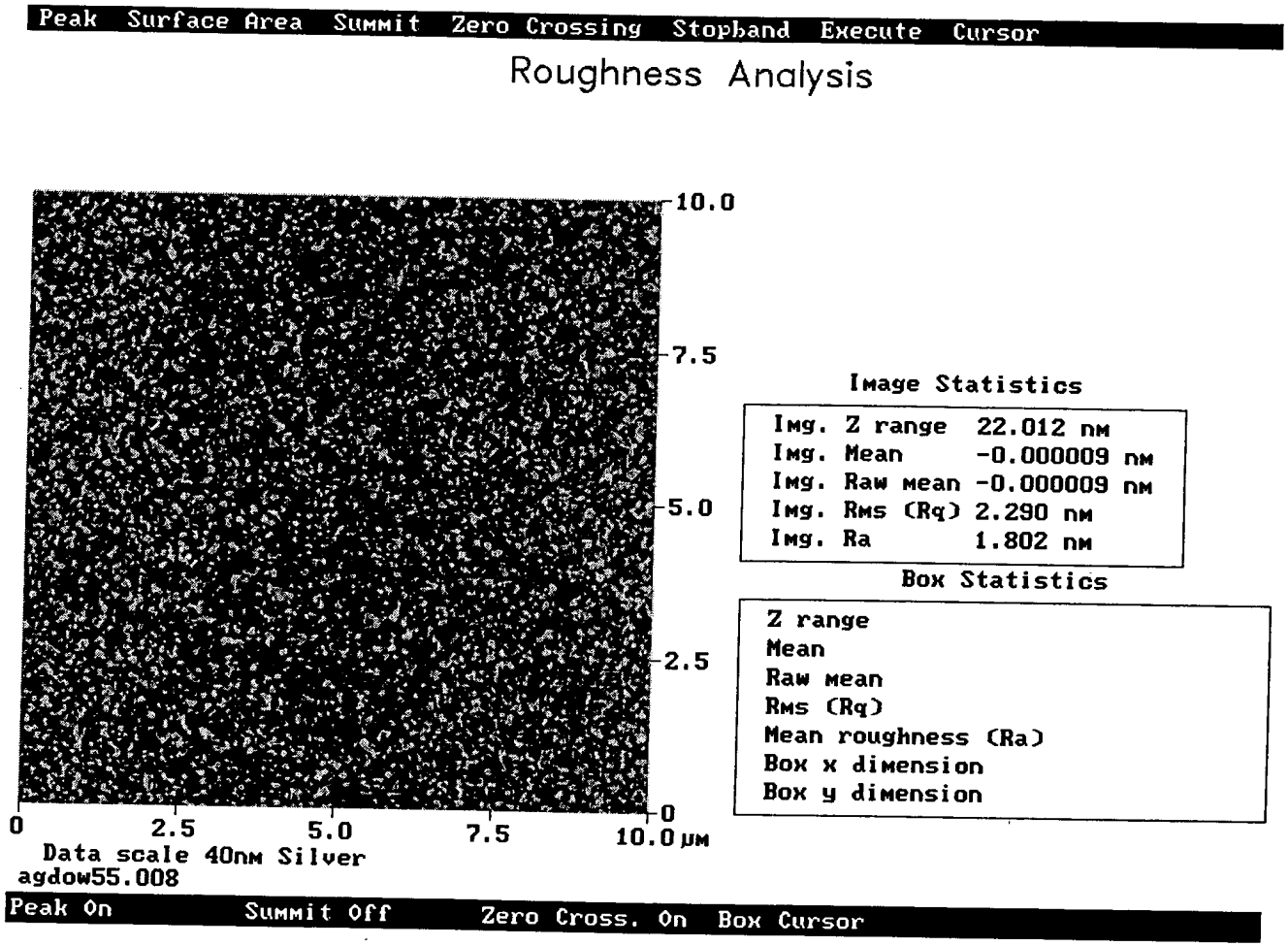

Peak Surface Area Summit Zero Crossing Stopband Execute Cursor
Roughness Analysis
10.0
7.5
5.0
2.5
0
0
2.5
5.0
7.5
10.0 µm
Data scale 40nm Silver
agdow55.008
Image Statistics
Img. Z range 22.012 nm
Img. Mean -0.000009 nm
Img. Raw mean -0.000009 nm
Img. Rms (Rq) 2.290 nm
Img. Ra 1.802 nm
Box Statistics
Z range
Mean
Raw mean
Rms (Rq)
Mean roughness (Ra)
Box x dimension
Box y dimension
Peak On
Summit Off
Zero Cross. On
Box Cursor

FIG 7A

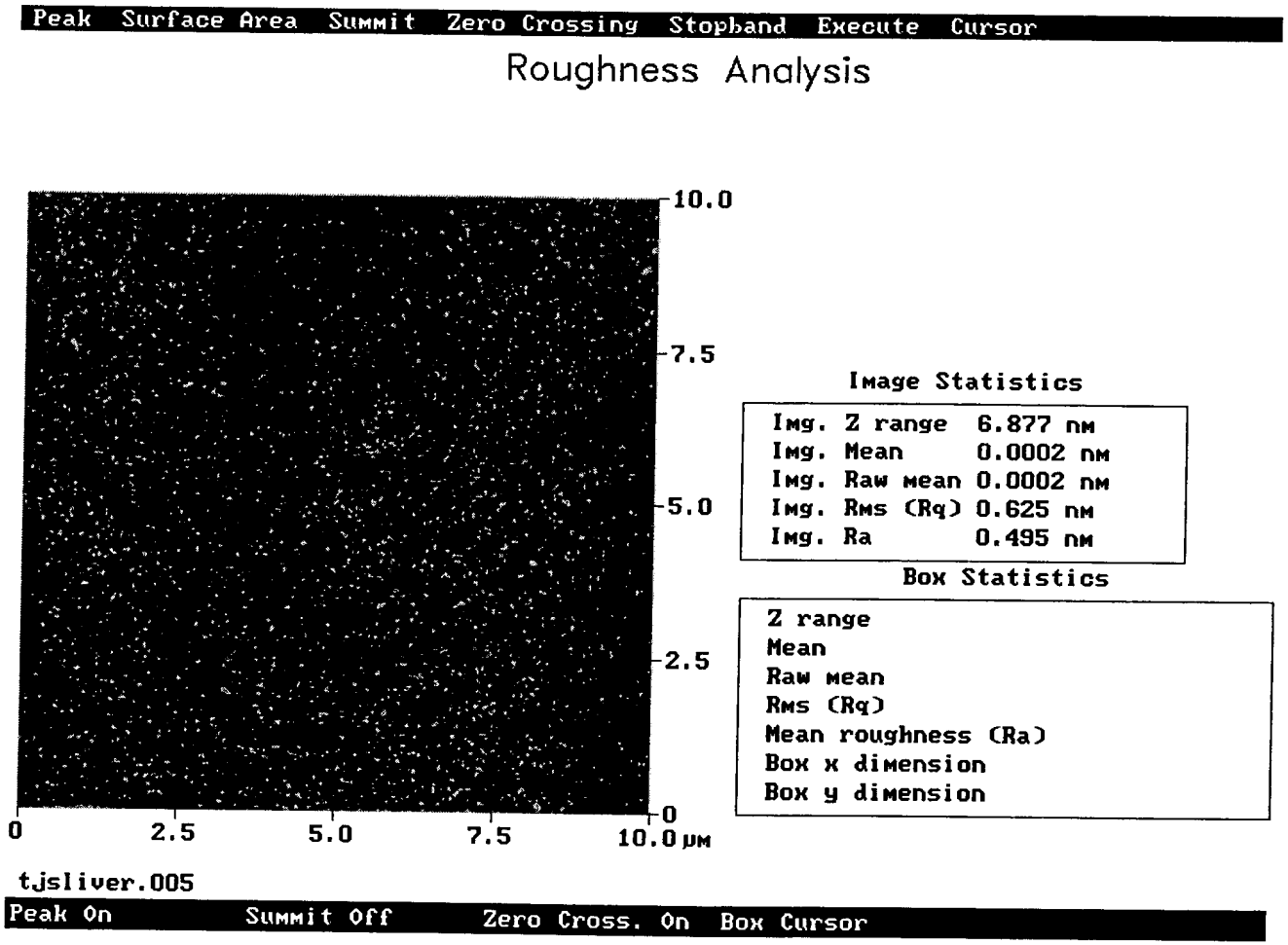

Peak Surface Area Summit Zero Crossing Stopband Execute Cursor
Roughness Analysis
10.0
7.5
5.0
2.5
0
0
2.5
5.0
7.5
10.0 µm
Image Statistics
Img. Z range 6.877 nm
Img. Mean 0.0002 nm
Img. Raw mean 0.0002 nm
Img. Rms (Rq) 0.625 nm
Img. Ra 0.495 nm
Box Statistics
Z range
Mean
Raw mean
Rms (Rq)
Mean roughness (Ra)
Box x dimension
Box y dimension
tjsliver.005
Peak On
Summit Off
Zero Cross. On
Box Cursor

FIG 7B